

U-8^{17.3}



LEVEL

NOTEBOOK NO. 311

Resource Recovery Corp.

TxD 8410-14

Pasco, WA

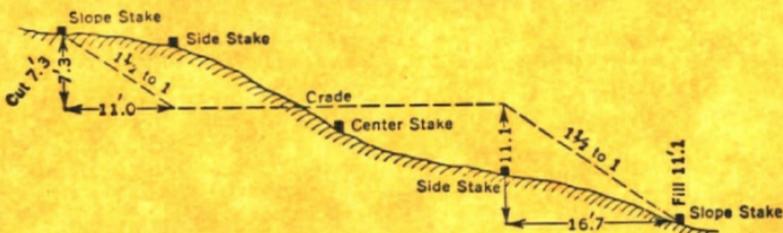
Photo Log ☺

USEPA SF

1452485

DISTANCES FROM SIDE STAKES FOR CROSS-SECTIONING Roadway of any Width. Side Slopes $1\frac{1}{2}$ to 1.

In the figure below: opposite 7 under "Cut or Fill" and under .3 read 11.0, the distance out from the side stake at left. Also, opposite 11 under "Cut or Fill" and under .1 read 16.7, the distance out from the side stake at right.



Cut or Fill	Distance out from Side or Shoulder Stake										Cut or Fill
	0	.1	.2	.3	.4	.5	.6	.7	.8	.9	
0	0.0	0.2	0.3	0.5	0.6	0.8	0.9	1.1	1.2	1.4	0
1	1.5	1.7	1.8	2.0	2.1	2.3	2.4	2.6	2.7	2.9	1
2	3.0	3.2	3.3	3.5	3.6	3.8	3.9	4.1	4.2	4.4	2
3	4.5	4.7	4.8	5.0	5.1	5.3	5.4	5.6	5.7	5.9	3
4	6.0	6.2	6.3	6.5	6.6	6.8	6.9	7.1	7.2	7.4	4
5	7.5	7.7	7.8	8.0	8.1	8.3	8.4	8.6	8.7	8.9	5
6	9.0	9.2	9.3	9.5	9.6	9.8	9.9	10.1	10.2	10.4	6
7	10.5	10.7	10.8	11.0	11.1	11.3	11.4	11.6	11.7	11.9	7
8	12.0	12.2	12.3	12.5	12.6	12.8	12.9	13.1	13.2	13.4	8
9	13.5	13.7	13.8	14.0	14.1	14.3	14.4	14.6	14.7	14.9	9
10	15.0	15.2	15.3	15.5	15.6	15.8	15.9	16.1	16.2	16.4	10
11	16.5	16.7	16.8	17.0	17.1	17.3	17.4	17.6	17.7	17.9	11
12	18.0	18.2	18.3	18.5	18.6	18.8	18.9	19.1	19.2	19.4	12
13	19.5	19.7	19.8	20.0	20.1	20.3	20.4	20.6	20.7	20.9	13
14	21.0	21.2	21.3	21.5	21.6	21.8	21.9	22.1	22.2	22.4	14
15	22.5	22.7	22.8	23.0	23.1	23.3	23.4	23.6	23.7	23.9	15
16	24.0	24.2	24.3	24.5	24.6	24.8	24.9	25.1	25.2	25.4	16
17	25.5	25.7	25.8	26.0	26.1	26.3	26.4	26.6	26.7	26.9	17
18	27.0	27.2	27.3	27.5	27.6	27.8	27.9	28.1	28.2	28.4	18
19	28.5	28.7	28.8	29.0	29.1	29.3	29.4	29.6	29.7	29.9	19
20	30.0	30.2	30.3	30.5	30.6	30.8	30.9	31.1	31.2	31.4	20
21	31.5	31.7	31.8	32.0	32.1	32.3	32.4	32.6	32.7	32.9	21
22	33.0	33.2	33.3	33.5	33.6	33.8	33.9	34.1	34.2	34.4	22
23	34.5	34.7	34.8	35.0	35.1	35.3	35.4	35.6	35.7	35.9	23
24	36.0	36.2	36.3	36.5	36.6	36.8	36.9	37.1	37.2	37.4	24
25	37.5	37.7	37.8	38.0	38.1	38.3	38.4	38.6	38.7	38.9	25
26	39.0	39.2	39.3	39.5	39.6	39.8	39.9	40.1	40.2	40.4	26
27	40.5	40.7	40.8	41.0	41.1	41.3	41.4	41.6	41.7	41.9	27
28	42.0	42.2	42.3	42.5	42.6	42.8	42.9	43.1	43.2	43.4	28
29	43.5	43.7	43.8	44.0	44.1	44.3	44.4	44.6	44.7	44.9	29
30	45.0	45.2	45.3	45.5	45.6	45.8	45.9	46.1	46.2	46.4	30
31	46.5	46.7	46.8	47.0	47.1	47.3	47.4	47.6	47.7	47.9	31
32	48.0	48.2	48.3	48.5	48.6	48.8	48.9	49.1	49.2	49.4	32
33	49.5	49.7	49.8	50.0	50.1	50.3	50.4	50.6	50.7	50.9	33
34	51.0	51.2	51.3	51.5	51.6	51.8	51.9	52.1	52.2	52.4	34
35	52.5	52.7	52.8	53.0	53.1	53.3	53.4	53.6	53.7	53.9	35
36	54.0	54.2	54.3	54.5	54.6	54.8	54.9	55.1	55.2	55.4	36
37	55.5	55.7	55.8	56.0	56.1	56.3	56.4	56.6	56.7	56.9	37
38	57.0	57.2	57.3	57.5	57.6	57.8	57.9	58.1	58.2	58.4	38
39	58.5	58.7	58.8	59.0	59.1	59.3	59.4	59.6	59.7	59.9	39
40	60.0	60.2	60.3	60.5	60.6	60.8	60.9	61.1	61.2	61.4	40

20 EXPOSURE 400 ASA

Photo	Date	Time	Taken By	Place
1	7/11/85	0830	Reinhart	Water truck
2	"	0835	"	Drill Rig
3	"	0836	"	Drilling Supplies
4	"	0840	"	Detrick's Forklift
5	"	0845	"	Off Loading
6	"	0850	"	" "
7	"	0900	"	SW corner Zone A
8	"	0905	"	SW corner Zone A
9	"	0910	"	Access Road Zone A
10	7/16/85	0750	"	Drilling EE1
11	"	0751	"	N/NE EE1
12	"	1145	"	200' S EE1
13	"	1150	"	Drilling EE1
14	"	1152	"	" "
15	"	1155	"	" "
16	"	1158	"	Personnel Person
17	"	1200	"	N/NE Drilling EE1
18	"	1205	"	Drilling EE1
19	"	1210	"	" "
20	"	1215	"	" "

Bill Reinhart

400 ASA

20 EXPOSURE

Photo	Date	Time	Taken By	Comments
1	7/16/85	1250	Rustler	Drilling EE1
2	"	1300	"	↓
3	"	1302	"	
4	"	1305	"	
5	"	1310	"	
6	"	1315	"	
7	"	1317	"	
8	"	1318	"	
9	"	1319	"	
10	"	1300	"	
11	7/17/85	1250	"	
12	"	1300	"	" "
13	"	1317	"	Top of mound Zone B
14	"	1320	"	Monitoring EE4
15	"	1325	"	Drilling "
16	"	1400	"	Top of log-note d. dig
17	"	1402	"	Personal Decor
18	"	1420	"	Drilling EE4
19	"	1431	"	" "
20	"	1440	"	Personal Decor

Roll # 3

Bill Rustler

400 ASA 20 EXPOSURE

Photo	Date	Time	Topic	Comments
1	0930	7/23/85	Pointe à la Pêche	E/NE EE-8
2	0935	"	"	Drilling EE-8
3	0940	"	"	" "
4	0942	"	"	" "
5	0945	"	"	VIEW N EE-8
6	0950	"	"	Drilling EE-8
7	0951	"	"	"
8	0952	"	"	"
9	0955	"	"	↓
10	0959	"	"	Personnel down
11	1002	"	"	Drilling EE-8
12	1010	"	"	" "
13	1400	"	Begun Well Const.	EE-8
14	"	"	"	↓
15	"	"	"	↓
16	"	"	"	↓
17	"	"	"	↓
18	"	"	"	↓
19	"	"	"	↓
20	"	"	"	↓

Roll #3

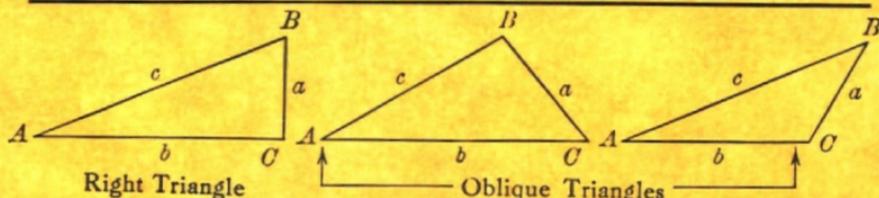
Bird Guntz

200 ASA

24 EXPOSURE

Photo	Date	Time	Taken By	Comments
1	7/29/85	0800	Posthale	Smiling EE7
2	"	0835	"	Wind NE
3	"	0835	"	Jan + Gandy
4	"	0900	"	Smiling EE7
5	"	0935	"	
6	"	0940	"	
7	"	0942	"	
8	"	1000	"	
9	"	1005	"	
10	"	1010	"	
11	"	1011	"	
12		1300	"	Make a well EE7
13	7/31/85	1305	"	Paul butonite
14	"	1310	"	Smiling faces
15	"	1312	"	Well construction
16	"	1314	"	EE7
17	"	1315	"	
18	"	1316	"	
19	"	1317	"	
20	"	1318	"	
21	"	1320	"	
22	"	1322	"	
23	"	1325	"	Personnel Director
24	"	1330	"	Areas

TRIGONOMETRIC FORMULÆ



Right Triangle

Oblique Triangles

Solution of Right Triangles

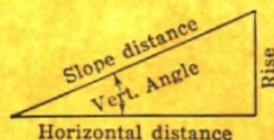
For Angle A . $\sin = \frac{a}{c}$, $\cos = \frac{b}{c}$, $\tan = \frac{a}{b}$, $\cot = \frac{b}{a}$, $\sec = \frac{c}{b}$, $\operatorname{cosec} = \frac{c}{a}$

Given	Required	
a, b	A, B, c	$\tan A = \frac{a}{b} = \cot B, c = \sqrt{a^2 + b^2} = a \sqrt{1 + \frac{b^2}{a^2}}$
a, c	A, B, b	$\sin A = \frac{a}{c} = \cos B, b = \sqrt{(c+a)(c-a)} = c \sqrt{1 - \frac{a^2}{c^2}}$
A, a	B, b, c	$B = 90^\circ - A, b = a \cot A, c = \frac{a}{\sin A}$
A, b	B, a, c	$B = 90^\circ - A, a = b \tan A, c = \frac{b}{\cos A}$
A, c	B, a, b	$B = 90^\circ - A, a = c \sin A, b = c \cos A$

Solution of Oblique Triangles

Given	Required	
A, B, a	b, c, C	$b = \frac{a \sin B}{\sin A}, C = 180^\circ - (A + B), c = \frac{a \sin C}{\sin A}$
A, a, b	B, c, C	$\sin B = \frac{b \sin A}{a}, C = 180^\circ - (A + B), c = \frac{a \sin C}{\sin A}$
a, b, C	A, B, c	$A + B = 180^\circ - C, \tan \frac{1}{2}(A - B) = \frac{(a - b) \tan \frac{1}{2}(A + B)}{a + b}$ $c = \frac{a \sin C}{\sin A}$
a, b, c	A, B, C	$s = \frac{a + b + c}{2}, \sin \frac{1}{2}A = \sqrt{\frac{(s - b)(s - c)}{bc}}$ $\sin \frac{1}{2}B = \sqrt{\frac{(s - a)(s - c)}{ac}}, C = 180^\circ - (A + B)$
a, b, c	Area	$s = \frac{a + b + c}{2}, \text{area} = \sqrt{s(s - a)(s - b)(s - c)}$
A, b, c	Area	$\text{area} = \frac{bc \sin A}{2}$
A, B, C, a	Area	$\text{area} = \frac{a^2 \sin B \sin C}{2 \sin A}$

REDUCTION TO HORIZONTAL



Horizontal distance = Slope distance multiplied by the cosine of the vertical angle. Thus: slope distance = 319.4 ft. Vert. angle = $5^\circ 10'$. From Table, Page IX. $\cos 5^\circ 10' = .9959$. Horizontal distance = $319.4 \times .9959 = 318.09$ ft. Horizontal distance also = Slope distance minus slope distance times (1 - cosine of vertical angle). With the same figures as in the preceding example, the following result is obtained. $\operatorname{Cosine} 5^\circ 10' = .9959$. $1 - .9959 = .0041$. $319.4 \times .0041 = 1.31$. $319.4 - 1.31 = 318.09$ ft.

When the rise is known, the horizontal distance is approximately:—the slope distance less the square of the rise divided by twice the slope distance. Thus: rise = 14 ft. slope distance = 302.6 ft. Horizontal distance = $302.6 - \frac{14 \times 14}{2 \times 302.6} = 302.6 - 0.32 = 302.28$ ft.

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